# Bunion

A bunion, known technically as hallux valgus, is a bony bump on the side of the foot at the base of the big toe. Bunions develop slowly as pressure on the joint at the base of the big toe causes the toe to move out of place, leaning inward toward the second toe. Because this joint carries a lot of weight during activities like standing and walking, bunions can cause foot pain, stiffness, redness, and swelling. Calluses may form where the big toe and second toe rub together or on the ball of the foot. Unless they are treated, bunions get worse over time, and it may become difficult to wear regular shoes or walk without pain. Bunions can occur in one or both feet.

In most cases, bunions develop in adulthood. Rarely, children may be born with bunions (known as congenital hallux valgus) or develop them later in childhood (juvenile or adolescent hallux valgus).

## Frequency

Bunions are a very common foot disorder, affecting about a third of adults in the United States. The prevalence of bunions increases with age. They are more common in women than in men, likely because of differences in foot anatomy, footwear, and genetic influences.

## Causes

The causes of bunions are unclear, although scientists suspect that both inherited and lifestyle factors contribute to their development. Studies suggest that congenital and juvenile hallux valgus tend to be related to joint deformities with a genetic cause. Little is known about the genetic contribution to bunions that occur later in life, and no specific genes involved in the development of bunions have been identified.

For bunions that appear in adulthood, inherited factors related to the shape and structure of the foot and the way the foot moves (foot mechanics) likely influence a person's risk of developing the condition. It has long been suggested that wearing ill-fitting shoes are another significant risk factor, specifically shoes that are too tight, shoes with high heels, or shoes with a narrow toe box. Research suggests that poorly fitting shoes probably do not cause bunions, but they may make bunions develop earlier or worsen more quickly in people with an underlying susceptibility.

Other risk factors for bunions include inflammatory diseases (such as rheumatoid arthritis), osteoarthritis, and flat feet (pes planus). Bunions are also a feature of several rare genetic syndromes that affect bone development, including Chitayat syndrome and fibrodysplasia ossificans progressiva.

## Inheritance Pattern

Bunions are a complex condition without a clear pattern of inheritance. Many affected individuals have multiple family members who are also affected. The risk of developing bunions is greater for first-degree relatives of affected individuals (such as siblings or children) as compared to the general public.

When bunions occur as part of a genetic syndrome, this feature follows the inheritance pattern of the syndrome.

## Other Names for This Condition

- bunion of great toe
- hallux abductovalgus
- hallux valgus
- HAV
- HV

## Diagnosis & Management

Formal Diagnostic Criteria

- Vanore JV, Christensen JC, Kravitz SR, Schuberth JM, Thomas JL, Weil LS, Zlotoff HJ, Mendicino RW, Couture SD; Clinical Practice Guideline First Metatarsophalangeal Joint Disorders Panel of the American College of Foot and Ankle Surgeons. Diagnosis and treatment of first metatarsophalangeal joint disorders. Section 1: Hallux valgus. J Foot Ankle Surg. 2003 May-Jun;42(3): 112-23. Review. Erratum in: J Foot Ankle Surg. 2003 Nov-Dec;42(6):394. *Citation on PubMed:* https://www.ncbi.nlm.nih.gov/pubmed/12815578

Formal Treatment/Management Guidelines

- Vanore JV, Christensen JC, Kravitz SR, Schuberth JM, Thomas JL, Weil LS, Zlotoff HJ, Mendicino RW, Couture SD; Clinical Practice Guideline First Metatarsophalangeal Joint Disorders Panel of the American College of Foot and Ankle Surgeons. Diagnosis and treatment of first metatarsophalangeal joint disorders. Section 1: Hallux valgus. J Foot Ankle Surg. 2003 May-Jun;42(3): 112-23. Review. Erratum in: J Foot Ankle Surg. 2003 Nov-Dec;42(6):394. *Citation on PubMed:* https://www.ncbi.nlm.nih.gov/pubmed/12815578

Research Studies from ClinicalTrials.gov

- ClinicalTrials.gov https://clinicaltrials.gov/ct2/results?cond=%22bunion%22+OR+%22hallux+abductovalgus%22+OR+%22hallux+valgus%22

Other Diagnosis and Management Resources

- American Academy of Orthopedic Surgeons
  https://orthoinfo.aaos.org/en/diseases--conditions/bunions/
- American College of Foot and Ankle Surgeons
  https://www.foothealthfacts.org/conditions/bunions
- American Podiatric Medical Association
  https://www.apma.org/Patients/FootHealth.cfm?ItemNumber=979
- Johns Hopkins Medicine: Bunion Surgery
  https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/bunion-surgery
- MedlinePlus Encyclopedia: Bunion Removal
  https://medlineplus.gov/ency/article/002962.htm
- NYU Langone Health: Diagnosing Bunions
  https://nyulangone.org/conditions/bunions-in-adults/diagnosis

## Additional Information & Resources

Health Information from MedlinePlus

- Encyclopedia: Bunion Removal
  https://medlineplus.gov/ency/article/002962.htm
- Encyclopedia: Bunions
  https://medlineplus.gov/ency/article/001231.htm
- Health Topic: Foot Injuries and Disorders
  https://medlineplus.gov/footinjuriesanddisorders.html

Educational Resources

- American Orthopaedic Foot & Ankle Society
  https://www.footcaremd.org/conditions-treatments/toes/bunions
- Merck Manual Consumer Version: Bunion
  https://www.merckmanuals.com/home/bone,-joint,-and-muscle-disorders/foot-problems/bunion
- NHS Choices (UK)
  https://www.nhs.uk/conditions/bunions/
- Pediatric Orthpaedic Society of North America: Adolescent Hallux Valgus
  https://posna.org/Physician-Education/Study-Guide/Adolescent-Hallux-Valgus

Scientific Articles on PubMed

- PubMed
  https://www.ncbi.nlm.nih.gov/pubmed?term=%28%28bunion%5BTIAB%5D%29+OR+%28hallux+valgus%5BTIAB%5D%29%29+AND+%28%28gene%5BTIAB%5D%29+OR+%28genetic*%5BTIAB%5D%29+OR+%28genes%5BTIAB%5D%29+OR+%28*herit*%5BTIAB%5D%29%29+AND+english%5Bla%5D+AND+human%5Bmh%5D

Medical Genetics Database from MedGen

- Congenital hallux valgus
  https://www.ncbi.nlm.nih.gov/medgen/82719
- Hallux valgus
  https://www.ncbi.nlm.nih.gov/medgen/5416

## Sources for This Summary


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  *Free article on PubMed Central:* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3775916/
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